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STATE OF MONTANA
NATURAL RESOURCE DAMAGE PROGRAM

INTRODUCTION TO REPORT OF
NATURAL RESOURCE DAMAGE ASSESSMENT
CLARK FORK RIVER BASIN NPL SITES

JANUARY 13, 1995



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**INTRODUCTION TO REPORT OF
NATURAL RESOURCE DAMAGE ASSESSMENT,
CLARK FORK RIVER BASIN NPL SITES, MONTANA**

**STATE OF MONTANA
NATURAL RESOURCE DAMAGE LITIGATION PROGRAM**

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The State of Montana has performed a natural resource damage assessment (NRDA) for facilities located at the Clark Fork River Basin National Priorities List (NPL) sites, including the Silver Bow Creek/Butte Area site, the Anaconda Smelter site, the Montana Pole site, and the Milltown Reservoir/Clark Fork River site. There have been multiple and continuous releases of hazardous and/or deleterious substances¹ from these facilities. Injuries to natural resources, including fish, surface water, benthic macroinvertebrates, groundwater, air, soils, vegetation, wildlife habitat and wildlife, have resulted from these releases. The Atlantic Richfield Company (ARCO) has been identified as the primary responsible party for these injuries. The State filed a lawsuit against ARCO, known as Montana v. ARCO, CV-83-317-HLN-PGH (D. Mont.), seeking the recovery of damages for injuries to natural resources, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601-9675, and the Montana Comprehensive Environmental Cleanup and Responsibility Act (CECRA), Mont. Code Ann. §§ 75-10-701 to 75-10-724. The State's NRDA determines the damages sought in that litigation. The State's NRDA is documented in the State's Report of Assessment. The Report of Assessment consists of this introduction, the State's Preassessment Screen and Assessment Plan, previously issued, and the various reports referenced herein and issued at this time.

¹ Subsequent references to "hazardous substances" include "hazardous and/or deleterious substances."

DOI Regulations

The State performed this NRDA in accordance with the natural resource damage assessment regulations promulgated by the U.S. Department of the Interior (DOI). 43 C.F.R. Part 11. The regulations provide that "the best available procedures" be used to determine natural resource damages. 42 U.S.C. § 9651(c). The regulations include standard procedures for simplified assessments; these "Type A" regulations are not applicable to this NRDA. The regulations also include alternative procedures for conducting assessment in more complicated cases; these "Type B" regulations were applied by the State. Although compliance with the regulations is not required, damages assessed in accordance with the regulations "shall have the force and effect of a rebuttable presumption on behalf of the trustee in any administrative or judicial proceeding" under CERCLA. 42 U.S.C. § 9607(f)(2)(C).

Preassessment Screen

The first step in a Type B natural resource damage assessment is the completion of a preassessment screen. It is meant to be a rapid review of readily available information to determine whether there is a reasonable probability of making a successful claim before money and effort are spent performing an assessment. 43 C.F.R. § 11.23(b).

On October 10, 1991, the State issued its Preassessment Screen, Clark Fork River Basin NPL Sites, Montana. The

Preassessment Screen, in part, concluded that there were releases of hazardous substances in sufficient quantities and concentrations to potentially cause injury to natural resources for which the State could assert trusteeship. It further concluded that an assessment could be conducted at a reasonable cost and that the Superfund Remedial Investigation/Feasibility Study (RI/FS) process would not restore the natural resources. Based upon this conclusion, the State also issued its Notice of Intent to Perform an Assessment. The Notice invited ARCO to participate in the development and performance of an NRDA and specifically provided ARCO with the opportunity to submit an assessment plan to the State.

Copies of the State's Preassessment Screen and Notice of Intent were mailed to ARCO, the U.S. Environmental Protection Agency (EPA), various interested parties, and potential trustees, including U.S. Department of Interior and the Confederated Salish and Kootenai Tribes. The issuance of these documents was also publicized in newspapers and the documents were generally made available to the public through public libraries in southwest Montana.

The DOI regulations allowed ARCO 30 days to respond to the Notice of Intent to Perform an Assessment. ARCO requested extensions of time through November 25, 1991, to respond. The State agreed to these requests. ARCO submitted written comments on the Preassessment Screen. It did not submit an assessment plan, and it did not indicate any intention to do so in the

future.

Assessment Plan

Following completion of the Preassessment Screen, an Assessment Plan was prepared. The purpose of the plan is to ensure that the assessment is performed in a planned and systematic manner and that scientific and economic methodologies can be conducted at a reasonable cost. 43 C.F.R. § 11.30(b).

On January 27, 1992, the State issued its Assessment Plan, Part I, Clark Fork River Basin NPL Sites, Montana. Part I identified the methodologies for conducting injury determination and quantification for surface water, fisheries, sediments and groundwater resources. In accordance with the DOI regulations, the Assessment Plan, Part I, was made available to ARCO, other interested parties, and the public for review and comment for a period in excess of 30 days. Comments initially were requested to be submitted in writing by March 2, 1992. ARCO and other parties requested an extension of time to submit comments, and the State granted an extension to March 16, 1992. Comments were submitted by ARCO, the U.S. Environmental Protection Agency, the U.S. Department of the Interior, the Missoula City/County Health Department, the Clark Fork-Pend Oreille Coalition, and four individuals.

On April 24, 1992, the State issued its Assessment Plan, Part II, Clark Fork River Basin NPL Sites, Montana. Part II identified the methodologies for conducting injury determination and quantification for the air, soil, vegetation and wildlife

resources and the methodologies to be used for assessing economic damages. Part II was made available to ARCO, other interested parties, and the public for review and comment for a period in excess of 30 days. Comments initially were requested to be submitted by June 1, 1992. ARCO and other interested parties requested an extension of time to submit comments and the State granted an extension to July 1, 1992. Comments were submitted by ARCO, DOI, the Clark Fork-Pend Oreille Coalition, the Citizens Technical Environmental Committee, and two individuals.

In 1993 and 1994 the State issued various preliminary assessment reports as part of an agreed-upon settlement process in the lawsuit, Montana v. ARCO. In May of 1993, the State issued five reports identifying and quantifying the injuries to groundwater resources in the Upper Clark Fork River Basin. In June of 1993, the State issued an aquatics resources report identifying and quantifying injuries to surface water, benthic macroinvertebrates, and trout. In September of 1993, the State issued a terrestrial resources report identifying and quantifying injuries to upland and riparian soils, vegetation, wildlife habitat and wildlife. In December of 1993, the State released three economic reports that quantified compensable value damages based upon the injuries to natural resources. In March of 1994, the State released a restoration report that displayed various alternatives for restoring injured resources. At that time a report evaluating the monetary value of groundwater was also released.

Based upon further evaluation and consideration of its Assessment Plan the State identified several additional tasks that it felt appropriate to undertake as part of its Assessment Plan. Thus, on June 8, 1994, the State issued its Assessment Plan, Part III, Clark Fork River Basin NPL Sites, Montana. Part III of the plan identified additional methodologies and sampling tasks involving aquatic resources and particularly trout and factors affecting trout populations. In accord with the DOI Regulations, Part III of the plan was also made available to ARCO, other interested parties and the public for review and comment for a period in excess of 30 days. ARCO and the Confederated Salish and Kootenai Tribes submitted comments on Part III of the plan.

The comments and the State's responses to the comments on the Assessment Plan are included in a separate volume of this Report of Assessment, which is also being issued at this time.

Modifications to Assessment Plan

The DOI Regulations provide that the Assessment Plan may be modified at any stage of the assessment as new information becomes available. 43 C.F.R. § 1132(e)(1). If a modification is significant in the judgment of the trustee, then the modification should be made available for public review before the tasks called for by the modification are begun. If the modifications are not significant, then the modifications should still be made available for public review, but implementation of the

modifications need not be delayed pending public review.

As the State implemented its Assessment Plan, additional information and analyses became available. As a result, the State made a number of modifications to the plan. These modifications, however, did not change the nature or scope of the injury determination, injury quantification, or damage determination phases. Therefore, the State determined that these changes to the Assessment Plan were not significant. The State's modifications to its Assessment Plan are included in a separate volume of this Report of Assessment, which is also being issued at this time. By the issuance of this volume setting forth the modifications to the State's Assessment Plan, the State hereby makes these modifications available for review by ARCO, any other interested parties, and the public.

Natural Resource Damage Assessment

The natural resource damage assessment conducted in this case pursuant to the State's Assessment Plan generally involved three related steps. These were injury determination, injury quantification, and damage determination. The injury determination step involved determining whether injuries to natural resources occurred and whether the injuries resulted from the releases of hazardous substances. 43 C.F.R. § 11.51. The injury quantification step involved determining the reduction in the quantity and quality of the natural resources and their services resulting from the releases of hazardous substances. 43

C.F.R. § 11.70. The damage determination step involved determining the amount of money to be sought as compensation for the injuries determined and quantified in the first two steps.

43 C.F.R. § 11.80. The State's damage assessment, which was conducted during the period 1991-1994, considered both past and future injury and damages.

Report of Assessment

Based upon the State's natural resource damage assessment, a report of assessment has been prepared containing the findings and conclusions of the assessment and the bases therefor. 43

C.F.R. § 11.90. The State's Report of Assessment consists of this *Introduction to Report of Natural Resource Damage Assessment*, together with the following reports:

1. *Preassessment Screen: Clark Fork Basin NPL Sites, Montana, October 1991.*
2. *Assessment Plan: Part I, Clark Fork Basin NPL Sites, Montana, January 1992.*
3. *Assessment Plan: Part II, Clark Fork Basin NPL Sites, Montana, April 1992.*
4. *Assessment Plan: Part III, Clark Fork Basin NPL Sites, Montana, June 1994.*
5. *Butte Groundwater Injury Assessment Report, Clark Fork River Basin NPL Sites, by Dr. Ann Maest, John J. Metesh and Dr. Richard Brand, January 1995.*
6. *Anaconda Groundwater Injury Assessment Report, Deer Lodge Valley, Montana, by Dr. William W. Woessner, January 1995.*
7. *Milltown Groundwater Injury Assessment Report, by Dr. William W. Woessner, January 1995.*

8. *Montana Pole Treatment Plant Groundwater Injury Assessment, Butte, Montana*, by John J. Metesh, April 1993.
9. *Rocker Groundwater Injury Assessment Report, Rocker, Montana*, by Dr. William W. Woessner, January 1995.
10. *Aquatics Resources Injury Assessment Report, Upper Clark Fork River Basin*, January 1995, by Dr. Joshua Lipton, et al, including the following appendices:

Appendix A: "Surface Water Sampling Conducted by Montana Natural Resource Damage Program," by Mark Kerr.

Appendix B: "Acute Toxicity in Pulse Events, Relative Sensitivity of Brown and Rainbow Trout to Pulses of Metals Typical of the Clark Fork River," by Dr. Harold Bergman, University of Wyoming.

Appendix C: "Influence of Acclimation/Adaptation on Toxicity Differential Tolerance and Resistance of Brown and Rainbow Trout to Water-borne Metal Concentrations Typical of the Clark Fork River," by Dr. Harold Bergman, University of Wyoming.

Appendix D: "Determine the Extent to Which Rainbow Trout and Brown Trout Avoid or Prefer Water Quality Characteristics of the Clark Fork River," by Dan Woodward, National Biological Survey and Dr. Harold Bergman, University of Wyoming.

Appendix E: "Chronic Toxicity of Cadmium, Copper, Lead and Zinc to Rainbow Trout and Brown Trout at Concentrations and Forms Present in Water and Aquatic Invertebrate Food Chains in the Upper Clark Fork River," by Dan Woodward and Charles Smith, National Biological Survey and Dr. Harold Bergman, University of Wyoming.

Appendix F: "The Physiological Impairment of Fish Caused by Chronic Exposure to Metals at Concentrations Typically Found in Clark Fork River Food and Water," by Dr. Harold Bergman, University of Wyoming.

Appendix G: "Assessment of Injury to Fish Populations: Clark Fork River NPL Sites, Montana," by Don Chapman Consultants, Inc.

Appendix H: "Supplement to Assessment of Injury to Fish Population: Clark Fork River NPL Sites," by T. W. Hillman and D. W. Chapman, January 1995.

11. *Clark Fork Damage Assessment, Bed Sediment Sampling and Chemical Analysis Report*, by D. A. Essig and Dr. J. N. Moore, University of Montana, October 1992.
12. *Terrestrial Resources Injury Assessment Report, Upper Clark Fork River NPL Sites*, by Dr. Joshua Lipton, et al, January 1995, including the following appendices:

Appendix A: "Assessment of Injury to Soils: Concentrations of Hazardous Substances in Exposed Soils and Comparison with Baseline Conditions."

Appendix B: "Evaluation of Phytotoxicity of Upland and Riparian Soils, Clark Fork River Basin, Montana," by Dr. Lawrence Kapustka and Dr. Joshua Lipton.

Appendix C: "Assessment of Injury to Vegetation, Wildlife and Wildlife Habitat-1992 Data."

Appendix D: "Results of 1994 Vegetation Survey in Anaconda Uplands in Southwest Montana."

Appendix E: "Assessment of Injury to Semi-Aquatic Mammals," by Dr. Harold Bergman.
13. *Assessment of Damages to Anglers and Other Recreators from Injuries to the Upper Clark Fork River Basin*, by Dr. Edward R. Morey, et al., January 1995.
14. *Contingent Valuation of Natural Resource Damages Due to Injuries to the Upper Clark Fork River Basin*, by Dr. William D. Schulze, et al., January 1995.
15. *Peer review of "Contingent Valuation of Natural Resource Damages Due to Injuries to the Upper Clark Fork River Basin"*, by Dr. Richard Bishop, January 12, 1995.
16. *Compensable Natural Resource Damage Determination, Upper Clark Fork River NPL Sites*, by Dr. Robert Rowe, et al., January 1995.
17. *Literature Review and Estimation of Municipal and Agricultural Values of Groundwater Use in the Upper Clark Fork River Drainage*, by Dr. John Duffield and Bioeconomics, Inc., January 1995.
18. *Restoration Determination Plan, Upper Clark Fork River Basin*, by Montana Natural Resource Damage Program and Rocky Mountain Consultants, January 1995.

19. *Quality Assurance/Quality Control Report, Natural Resource Damage Assessment of Upper Clark Fork River Sites*, by Mark Kerr and Diane Short, January 1995.
20. *Responses to Comments on Assessment Plan, Clark Fork Basin NPL Sites, Montana*, January 1995.
21. *Modifications to Assessment Plan, Clark Fork Basin NPL Sites, Montana*, January 1995.
22. *State of Montana v. Atlantic Richfield Company, Natural Resource Damage Assessment and Enforcement Costs*, by The Barrington Consulting Group, January 1995.
23. *A Brief Historical Overview of Anaconda Copper Mining Company's Principal Mining and Smelting Facilities, Along Silver Bow and Warm Springs Creeks, Montana*, by Alan S. Newell, Historical Research Associates, Inc., January 12, 1995.

The State's Preassessment Screen and Assessment Plan, Parts I, II and III, were previously released and are contained in the administrative record established for this assessment. All of the other reports, which make up this assessment, are being released at this time. These reports are also part of the administrative record. The administrative record also contains the references cited in these reports and certain underlying data and data reports which support the conclusions reached in these Reports.

The above referenced *Restoration Determination Plan (RDP)* is being issued at this time for public comment; a revised RDP may be issued after public review and comment. 43 C.F.R. § 11.81(d).

This Report of Assessment has been provided to ARCO, EPA, DOI, the Confederated Salish and Kootenai Tribes and other interested parties, and has been made available to the public. The State has also presented to ARCO a demand in writing for a

sum certain that represents the damages determined as a result of the assessment plus the reasonable costs of conducting the assessment and enforcing the claim. See 43 C.F.R. § 11.91. The State has requested that ARCO respond to the demand within 60 days. Except for the assessment and enforcement costs, all of the natural resource damages recovered by the State will be used to restore, rehabilitate, replace or acquire equivalent natural resources. 42 U.S.C. § 9607(f)(1).

Coordination with Superfund RI/FS Process

In accordance with the DOI regulations, the State coordinated its assessment with the RI/FS activities of the U.S. Environmental Protection Agency (EPA) and the Montana Superfund Program through regular communications with the project managers for the various Superfund operable units. 43 C.F.R. § 11.23(f). Data, information and reports prepared as a part of the Superfund process were provided to the Montana Natural Resource Damage Program. The Preassessment Screen, the Assessment Plan, Parts I, II and III, and Report of Assessment have been or are being provided to EPA and the Montana Superfund Program. Validated data and other information obtained as a part of the assessment were also provided to EPA and the Montana Superfund Program.

An important subject of extensive communication and coordination among the State, EPA and the Montana Superfund Program pertained to the restoration alternatives analyzed and selected by the State as a part of its NRDA. In fact, the

effects and anticipated effects of response actions selected and to be selected as a part of the RI/FS process were considered as a part of the restoration analysis. 43 C.F.R. § 11.84(c)(2). The goal of the natural resource damage provisions of CERCLA, however, is to restore natural resources to their baseline conditions (i.e. conditions that would have existed without the releases of hazardous substances). The Superfund RI/FS process, although it may remediate threats to human health and the environment, does not necessarily restore the injured resources to their baseline conditions. Accordingly there exists the potential for conflict between the two programs.

Coordination with Trustees

As provided in the DOI regulations, the State is the lead trustee for all of the natural resources for which it has asserted trusteeship in this assessment. See 43 C.F.R. § 11.32(a)(1)(ii)(D). This includes all ground water, surface water, stream bank and bed sediments, air, macroinvertebrates, and fish and wildlife within the Upper Clark Fork River Basin.²

The State acknowledges that the United States, through its Departments of Agriculture and the Interior, is a potential trustee for certain natural resources. These federal departments may be the lead trustee for certain natural resources such as the land, including soil and vegetation, within national parks and

² The basis for the State's trusteeship over these resources is set forth in Appendix A, hereto.

national forests. The State did not assess damages for injuries to these natural resources.

In accordance with the DOI regulations, the State coordinated its efforts with other potential trustees in several ways.³ 43 C.F.R. § 11.32(a)(1). The State discussed the NRDA with representatives of the U.S. Departments of Interior and Agriculture on numerous occasions. These representatives were provided copies of the Preassessment Screen and Assessment Plan, Parts I, II and III. The U.S. Department of Interior stated in its comments on Part I of the Assessment Plan that it wished "to commend the State of Montana for its repeated and ongoing efforts to coordinate your natural resource damage assessment efforts with those of the other trustees for natural resources." (Letter from DOI dated March 19, 1992.) It again commended the State for its efforts in its comments on Part II of the Assessment Plan. (Letter from DOI dated July 1, 1992.) The federal representatives took the position that the United States could not participate in the State's NRDA. Accordingly, the State acted independently to conduct the NRDA, but provided documents and other information to the federal representatives and received documents and other information from them. A copy of this Report of Assessment is also being provided to these representatives.

³ The Confederated Salish and Kootenai Tribes also claim to be a trustee of natural resources in the Upper Clark Fork River Basin. While not formally recognizing the status of the Tribes as trustees, the State also attempted to coordinate its assessment efforts with the Tribes as if they were potential trustees in the same manner that it coordinated its efforts with the United States Department of Interior. However, prior to May of 1993, the Tribes had led the State to believe that they were not interested in the NRDA.

ARCO Involvement

The primary responsible party is ARCO. In accordance with the DOI regulations, it was afforded substantial opportunities to participate in the NRDA. 43 C.F.R. § 11.32(a)(2). First, it was provided the Preassessment Screen at a time earlier than provided for by the regulations. Second, ARCO submitted extensive comments on the Preassessment Screen that were promptly reviewed and considered by the State. Third, the Notice of Intent to Perform an Assessment invited ARCO's participation in the assessment by submitting an assessment plan. Fourth, the State provided Parts I, II and III of the Assessment Plan to ARCO. Fifth, ARCO submitted extensive comments on Parts I, II and III that were also promptly reviewed and considered by the State. Sixth, as a part of the assessment, ARCO was given the opportunity to view much of the State's sampling activities and obtain split samples. Seventh, the State provided to ARCO all validated data collected as a part of the assessment. Eighth, the State provided ARCO with a preliminary version of much of its Report of Assessment during the settlement process in Montana v. ARCO. Ninth, a copy of this Report of Assessment has been provided to ARCO together with a demand for a sum certain in damages. Tenth, ARCO was allowed to review and copy the Administrative Record established as a part of the NRDA.

Public Involvement

The State afforded opportunities for public involvement in

the NRDA that often exceeded the provisions of the DOI regulations. 43 C.F.R. § 11.32(c). The public was given many of the same opportunities for involvement as was provided to ARCO. The Preassessment Screen was provided at an early time. Parts I, II and III of the Assessment Plan were made available for review and comment. All comments were promptly reviewed and considered. Validated data and other assessment-related documents are contained in the administrative record that was made available for public review. Representatives of the Natural Resource Damage Program have met and discussed the NRDA with various representatives of the public on numerous occasions. Furthermore, earlier versions of the various components of the Report of Assessment were released and made available to the public during the settlement process in Montana v. ARCO. Moreover, the *Restoration Determination Plan* is being made available at this time for public review and comment and the entire Report of Assessment is being made available for public review through various libraries located in southwest Montana.

Damages Excluded

CERCLA provides that natural resource damages cannot be recovered under certain circumstances. ARCO has the burden to prove that any of these affirmative defenses apply to relieve it of any natural resource damages liability. Nevertheless, the State has considered these defenses as a part of its assessment. 43 C.F.R. § 11.71(g).

There is no natural resource damage liability if

the damages to natural resources complained of were specifically identified as an irreversible and irretrievable commitment of natural resources in an environmental impact statement, or other comparable environmental analysis, and the decision to grant a permit or license authorizes such commitment of natural resources, and the facility or project was otherwise operating within the terms of its permit or license. . . .

42 U.S.C. § 9607(f)(1). For this defense to apply there must be (1) a specific identification of an irreversible and irretrievable natural resource commitment in (2) an environmental impact statement or similar analysis; (3) the authorization of the commitment in a permit or license; and (4) compliance with the permit or license. These four conditions are not met for any of the natural resource injuries for which the State seeks damages.

A second permit-related defense provides that "damages resulting from a federally permitted release" are recoverable under existing law in lieu of CERCLA. 42 U.S.C. § 9607(j). A "federally permitted release" includes releases pursuant to certain permits issued under the Resource Conservation and Recovery Act (RCRA), Clean Air Act, Clean Water Act, Safe Drinking Water Act, Marine Protection, Research and Sanctuaries Act, Atomic Energy Act and certain State permitted releases related to oil and gas well injections. 42 U.S.C. § 9601(10). The "federally permitted release" defense only applies to releases that are in compliance with a permit. Damages may be recovered for releases that were not expressly permitted, that

exceeded the permit limitation, or that occurred at a time when there was not a permit. See 53 Fed. Reg. 27268 (1988). In this case there were not any "federally permitted releases" that were divisible from unpermitted releases which would relieve ARCO of liability.

CERCLA also provides that there is no liability for natural resource damages "where such damages and the release of a hazardous substance from which such damages resulted have occurred wholly before December 11, 1980," which was the effective date of CERCLA. 42 U.S.C. § 9607(f)(1). This defense applies only if all releases ended before December 11, 1980, and only if no damages occurred on or after December 11, 1980. This defense does not apply to this NRDA because the releases of hazardous substances and the injuries and damages resulting from the releases have continued after December 11, 1980.

CERCLA also provides a defense to natural resource damages resulting from the application of a pesticide product registered under the Federal Insecticide, Fungicide, and Rodenticide Act. 42 U.S.C. § 9607(i). A defense to natural resource damages is also provided under limited circumstances that result from a release of recycled oil. 42 U.S.C. § 9614(c). The State assessed damages that primarily resulted from heavy metals released from mining and milling wastes. Thus, these two defenses did not apply.

Conclusion

The conclusions to be reached from this Report of Assessment

are set forth in the various injury and damage determination reports, and in the State of Montana's demand letter, which are being issued herewith. In summary, ARCO is liable to the State of Montana for \$635,410,000 in damages and costs for injuries to natural resources in the Upper Clark Fork River Basin. This liability consists of the following: \$300,780,000 in past and future compensable value damages (including \$19,680,000 in interest between January 1, 1994 and January 1, 1995); \$326,840,000 in damages based upon restoration costs; and \$7,790,000 for assessment and enforcement costs (through November 30, 1994).

It may be observed that this damage claim is most reasonable and could have been much greater. For example, the compensable value damages arising from past lost use, and non-use, amounting to more than \$200,000,000, go back only to 1981. The State of Montana sustained hundreds of millions in compensable value damages prior to 1981 which are not included in its present damage claim. Also consider the fact that the State's compensable value claim includes future damages only in the amount of about \$86,000,000 (including one year of interest).⁴

⁴ This \$86,000,000 claim in future damages for lost use and non-use is conservative for various other reasons as explained in the State's Report of Assessment, and particularly in its *Assessment of Damages to Anglers and Other Recreators from Injuries to the Upper Clark Fork River Basin*, by Dr. Edward Morey, et al., and in its *Contingent Valuation of Natural Resource Damages Due to Injuries to the Upper Clark Fork River Basin*, by Dr. William Schulze, et al. Further proof that this claim is conservative is offered in the Report of Assessment in Dr. Duffield's *Literature Review and Estimation of Municipal and Agricultural Values of Groundwater Use in the Upper Clark Fork River Drainage*. This report indicates a future lost use value of the Butte Hill aquifers and groundwater, alone, of about \$32,000,000. (Note, the values in this report were submitted as back-up to the compensable values determined in the contingent valuation report. They would be used to determine the compensable value damages only if the damages calculated in the contingent valuation report were not used.)

This is based on the assumption that there will be a partial cleanup of all of the injured resources within 20 years. In fact, many of the injured resources will not be cleaned up until much later and certain resources, such as the Butte Hill, Anaconda and Milltown groundwater, will never be cleaned up. According to the State's *Compensable Natural Resource Damage Determination*, January 1995, the future compensable damages for injuries to all resources, if there is no additional cleanup, would be \$164.5 million.

In comparing the restoration costs to the compensable values, the restoration costs appear quite reasonable. These costs, amounting to about \$327,000,000, are particularly reasonable considering that the compensable damages are highly discounted for present value. Such discounts made by today's economists will make little sense to future generations of Montana citizens if the resources are not restored to at least the degree set forth in the State's *Restoration Determination Plan*. Furthermore, these restoration costs do not even approach the true costs of restoring all of the resources (such as those under Opportunity Ponds and Milltown Reservoir). The State, in fact, is foregoing a much greater restoration claim which it may have asserted.

In conclusion, the State of Montana's \$635,410,000 damage claim may be viewed as very reasonable when compared to the great detriment that Montana has suffered for so long, and will continue to suffer, as a result of the injuries caused by the

release of hazardous substances, and may even be viewed as minimal when considering the tremendous wealth that was created by exploiting Montana's natural resources in the course of creating those injuries.

APPENDIX A

MONTANA'S TRUSTEESHIP OVER NATURAL RESOURCES

The State of Montana is trustee for the natural resources which are the subject of this NRDA pursuant to numerous authorities. The authorities listed below are not exclusive, and there are additional constitutional, statutory, regulatory, judicial and common-law authorities indicative of Montana's trusteeship. The authorities include:

Natural Resources Generally:

Several provisions of the Montana Constitution and statutes generally support the proposition that the State has a trusteeship¹ interest in its natural resources for the benefit of its citizens. These include:

(1) Right to a clean and healthful environment: "All persons are born free and have certain inalienable rights. These include the right to a clean and healthful environment. . . ." Mont. Const. art II, § 3.

(2) Protection of clean and healthful environment: "The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations." Mont. Const. art IX, § 1(1). "The legislature shall provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources." Mont. Const. art. IX, § 1(3).

(3) Reclamation of natural resources: "All lands disturbed by the taking of natural resources shall be reclaimed." Mont. Const. art. IX, § 2(1).

(4) Montana Environmental Policy Act: The purpose of MEPA "is to declare a state policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the state, and to establish an environmental quality council." Mont. Code Ann. § 75-1-102. In order to carry out this policy:

¹ The term "trusteeship" is used as it is used in CERCLA, 42 USC § 9607(f). Natural resources located within a state are within the "trusteeship" of such state if they are owned or held in trust, or managed or controlled by, or appertain to, such state. (42 USC § 9601(16).)

"[I]t is the continuing responsibility of the state of Montana to use all practicable means consistent with other essential considerations of state policy to improve and coordinate state plans, functions, programs, and resources to the end that the state may:

(a) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(b) assure for all Montanans safe, healthful, productive and aesthetically and culturally pleasing surroundings;

(c) attain the wide range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(d) preserve important historic, cultural, and natural aspects of our unique heritage and maintain, wherever possible, an environment which supports diversity and variety of individual choice;

(e) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(f) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." Mont. Code Ann. § 75-1-103(2).

Water:

There are many provisions of the Montana Constitution, statutes and case law that indicate that the State has a substantial interest and exercises a substantial degree of regulation, management and control over water resources within the state, including all ground and surface waters. (Some of these same authorities also establish the State's interests in fish and wildlife.) The relevant authorities include:

Property of the State:

(1) "All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriate for beneficial uses as provided by law." Mont. Const. art. IX, § 3(3).

(2) The State of Montana owns the waters of the State in public trust for the benefit of the people. Montana Coalition for Stream Access, Inc. v. Curran, 682 P.2d 163, 170-171. In addition to surface water, this public trust also applies to groundwater resources. Galt v. Montana Dept. of Fish, Wildlife & Parks, 731 P.2d 912, 914-15 (Mont. 1987); also see Intel Corp. v. Hartford

Acc. & Indem. Co., 692 F. Supp. 1171, 1183-1189 (ND Cal. 1988),
aff'd 952 F.2d 1551, 1565 (9th Cir. 1991).

(3) "Pursuant to Article IX of the Montana Constitution, the legislature declares that any use of water is a public use and that the waters within the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses. . . ." Mont. Code Ann. § 85-2-101(1).

(4) One who has a decreed water right does not own the corpus of any part of the flow of a stream. She or he is only entitled to the beneficial use of the amount of water provided by the decree. Tucker v. Missoula Light & Water Co., 250 P. 11, 15 (Mont. 1926),
quoted in McDonald v. State, 722 P.2d 598, 602 (Mont. 1986).

(5) "The legislature recognizes that water is one of the most valuable and important renewable resources in Montana." Mont. Code Ann. § 85-1-601(3).

Water Use:

(6) "The legislature shall provide for the administration, control, and regulation of water rights and shall establish a system of centralized records, in addition to the present system of local records." Mont. Const. art. IX, § 3(4). This requirements is implemented by Mont. Code Ann. §§ 85-2-101(1) et seq.

(7) "The general welfare of the people of Montana, in view of the state's population growth and expanding economy, requires that water resources of the state be put to optimum beneficial use and not wasted." Mont. Code Ann. § 85-1-101(1).

(8) "The state, in the exercise of its sovereign power . . . shall coordinate the development and use of the water resources of the state so as to effect full utilization, conservation, and protection of its water resources." Mont. Code Ann. § 85-1-101(3).

(9) "The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life." Mont. Code Ann. § 85-1-101(5).

(10) "The public interest requires the construction, operation, and maintenance of a system of works for the conservation, development, storage, distribution, and utilization of water, which construction, operation, and maintenance is a single object and is in all respects for the welfare and benefit of the people of the state." Mont. Code Ann. § 85-1-101(6).

(11) "The legislature finds that: (a) Montana's citizens depend on groundwater for a variety of uses, including domestic, agricultural, industrial, irrigation, mining, municipal, power, and

recreation, and for maintenance of ecosystems and surface water supplies. . . ." (Mont. Code Ann. § 85-2-902(1).)

Water Quality:

(12) It is the public policy of the State to "(1) conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses; (2) provide a comprehensive program for the prevention, abatement, and control of water pollution." Mont. Code Ann. § 75-5-101.

(13) In accordance with this policy, the State formulates standards of water purity. Mont. Code Ann. § 75-5-301. The State also establishes pretreatment standards for waste water discharges into a municipal disposal system, effluent standards, toxic effluent standards and prohibitions, and standards of performance for new point source discharges. Mont. Code Ann. § 75-5-304.

(14) It is unlawful to "cause pollution of any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters. . . ." Mont. Code Ann. § 75-5-605.

(15) "It is the public policy of [the] state to protect, maintain, and improve the quality and potability of water for public water supplies and domestic uses." Mont. Code Ann. § 75-6-101.

(16) The State establishes standards concerning "maximum contaminant levels for waters that are or will be used for a public water supply system." Mont. Code Ann. § 75-6-103(2)(a).

(17) The State prohibits the "discharge [of] sewage, drainage, industrial waste, or other wastes that will cause pollution of state waters used by a person for domestic use or as a source of a public water system or water or ice company." The State also prohibits the "discharge [of] sewage, drainage, industrial waste, or other waste into any state waters or on the banks of any state waters or into any abandoned or operating water well unless the sewage, drainage, industrial waste, or other waste is treated as prescribed" by the State. Mont. Code Ann. §§ 75-6-112(1)&(2).

Fish, Wildlife, and Wildlife Habitat:

In addition to the above authorities, there are a number of other authorities that establish the State's interests in fish, wildlife, and wildlife habitat. These include:

(1) The State of Montana has a property interest in the fish

and game within its borders. As the sovereign, the State owns such wildlife in public trust for the use and benefit of the people. State v. Fertterer, 841 P.2d 467, 470-471 (Mont. 1992).

(2) "Navigable rivers, sloughs, or streams between the lines of ordinary high water . . . shall hereafter be public waters for the purpose of angling, and any rights of title to such streams or the land between the high water flow lines . . . shall be subject to the right of any person owning an angler's license of this state who desires to angle therein or along their banks to go upon the same for such purpose." Mont. Code Ann. § 87-2-305.

(3) "The legislature finds that the conservation of rivers and their fisheries is of vital social and economic importance to Montana." Mont. Code Ann. § 87-1-255.

(4) It is the policy of Montana "to manage certain nongame wildlife for human enjoyment, for scientific purposes, and to insure their perpetuation as members of ecosystems." The legislature also declared that "wildlife indigenous to th[e] state which may be found to be endangered within the state should be protected in order to maintain and to the extent possible enhance their numbers" and that the State should assist in the protection of wildlife that are deemed to be endangered elsewhere. Mont. Code Ann. § 87-5-103. ("Nongame wildlife" and "wildlife" for the purposes of this part include fish. Mont. Code Ann. § 87-5-102.)

(5) It is the policy of Montana "that is fish and wildlife resources and particularly the fishing waters within the state are to be protected and preserved to the end that they be available for all time, without change, in their natural existing state except as may be necessary and appropriate after due consideration of all factors involved." Mont. Code Ann. § 87-5-501.

(6) The Department of Fish, Wildlife and Parks "shall supervise all the wildlife, fish, game, game and nongame birds, waterfowl, and the game and bur-bearing animals of the state." Mont. Code Ann. § 87-1-201(1); Heiser v. Severy, 158 P.2d 501, 505 (Mont. 1945). It has extensive authority regarding fishing, hunting and trapping licenses (Mont. Code Ann. tit. 87, ch. 2), fish and wildlife restrictions and regulations (Mont. Code Ann. tit. 87, ch. 3), and wildlife protection (Mont. Code Ann. tit. 87, ch. 5).

(7) The Montana State Fish, Wildlife & Parks Commission has the power to "set the policies for the protection, preservation and propagation of the wildlife, fish, game, furbearers, waterfowl, nongame species, and endangered species of the State." Mont. Code Ann. §§ 87-1-301 et. seq.

(8) Water conservancy districts may be formed to promote various purposes including to "develop and conserve water resources and related lands, forest, fish and wildlife resources" and to

"further provide for the conservation, development, and utilization of land and water for beneficial uses, including but not limited to domestic water supply, municipal water supply, recreation, and wildlife." Mont. Code Ann. §§ 85-9-102(5)&(6).

(9) "An abundance of good trout streams is unquestionably an asset of considerable value to the people of Montana." Paradise Rainbows v. Fish and Game Commission, 421 P.2d 717, 721 (Mont. 1966).

(10) The state Land Commission is authorized to acquire lands, expend funds and develop and maintain wildlife habitat. Mont. Code Ann. §§ 87-1-241 and 87-1-242.

Land, Soils, Sediments, Streambeds and Banks:

There are many provisions of the Montana Constitution, statutes and case law that indicate the State has a substantial interest or exercises a substantial degree of regulation, management and control over certain lands, including the beds and banks of rivers and streams. The relevant provisions include:

(1) "All lands of the state that have been or may be granted by Congress, or acquired by gift or grant or devise from any person or corporation, shall be public lands of the state. They shall be held in trust for the people . . . for the respective purposes for which they have been or may be granted, donated or devised." Mont. Const. art. X, § 11(1).

(2) "It is the policy of the state of Montana that its natural rivers and streams and the lands and property immediately adjacent to them within the state are to be protected and preserved to be available in their natural or existing state and to prohibit unauthorized projects and in so doing to keep soil erosion and sedimentation to a minimum. . . ." Mont. Code Ann. § 75-7-102.

(3) "[T]he ownership of land under navigable waters is an incident of sovereignty." Generally, the United States "holds such lands in trust for future States, to be granted to such States when they enter the Union and assume sovereignty on an 'equal footing' with the established States. . . ." Montana v. United States, 450 U.S. 544, 551, 101 S.Ct. 1245, 1251 (1981) (citations omitted).

(4) If a river is navigable for title purposes, under the federal log floating test, at the time of statehood, the state acquired ownership of the bed and banks up to the high water mark when it acquired statehood. Montana Coalition for Stream Access, Inc. v. Curran, 682 P.2d 163, 166 (Mont. 1984).

(5) "The state is the owner of . . . all land below the water of a navigable lake or stream." Mont. Code Ann. § 70-1-202.

(6) A river is navigable, for title purposes, if it is capable of use by the public for purposes of transportation or commerce. Edwards v. Severin, 785 P.2d 1022, 1023 (Mont. 1990). Evidence of use of the river by recreational boats and rafts is evidence of such navigability. Id. at 1024.

(7) Under the public trust doctrine, lands within the beds of navigable rivers and other navigable waters, below the ordinary high water mark, are subject to the public trust easement for navigation, commerce and fisheries; this easement is owned by the State in trust for the people. See Illinois Central Railroad v. Illinois, 146 U.S. 387, 452-458 (1892), cited in Montana Coalition for Stream Access, Inc. v. Curran, 682 P.2d 163, 167 (Mont. 1984); Nat. Audubon Soc. v. Superior Court, 658 P.2d 709, 723, cited in Dept. of State Lands v. Pettibone, 702 P.2d 943, 957 (Mont. 1985), People v. California Fish, 138 P. 79, 82 (Cal. 1913).

(8) Subject to certain limitations, "all surface waters that are capable of recreational use may be so used by the public without regard to the ownership of the land underlying the waters." The term "'surface water' means, for the purpose of determining the public's access for recreational use, natural water body, its bed, and its banks up to the ordinary high-water mark." Mont. Code Ann. §§ 23-2-301(12) and 302(1); see Galt v. Montana, 731 P.2d 912, 913-16 (Mont. 1987).

(9) "[U]nder the public trust doctrine and the 1982 Montana Constitution, any surface waters that are capable of recreational use may be so used by the public without regard to streambed ownership or navigability for nonrecreational purposes." Montana Coalition for Stream Access, Inc. v. Curran, 682 P.2d at 171-172. "The public has the right to use the waters [of the State] and the bed and banks up to the ordinary high water mark." Montana Coalition for Stream Access, Inc. v. Hildreth, 684 P.2d 1088, 1091.

(10) "All lands lying and being in and forming a part of the abandoned bed of any navigable stream or lake in this state and lying between the meandered lines of such stream or lake . . . except such lands as are occupied by and belonging to the adjacent landowners as accretions, belong to the state of Montana to be held in trust for the benefit of the public schools of the state." Mont. Code Ann. § 77-1-102.

(11) The Montana Rangeland Resources Act, Mont. Code Ann. §§ 76-14-101 to 116. Montana has established a program of rangeland management whereby "the importance of Montana's rangeland with respect to livestock, forage, wildlife habitat, high-quality water production, pollution control, erosion control, recreation, and the natural beauty of the state is recognized." Mont. Code Ann. § 76-13-102(1).

(12) Grazing Districts, Mont. Code Ann. §§ 76-16-101 to 415. It states its purpose is "to provide for the conservation,

protection, restoration, and proper utilization of grass, forage, and range resources of the state of Montana. . . ." Mont. Code Ann. § 76-16-102.

(13) The Montana Soil Survey Act, Mont. Code Ann. §§ 76-11-201 to 204. It states that "[t]he legislature finds that the soils of the state of Montana are one of its most basic and precious natural resources. . . ." Mont. Code Ann. § 76-11-202(1).

(14) Floodplain and Floodway Management, Mont. Code Ann. §§ 76-5-101 to 1117. "[T]he public interest necessitates management and regulation of flood-prone lands and waters in a manner consistent with sound land and water use management practices which will prevent and alleviate flooding threats to life and health and reduce private and public economic losses." Mont. Code Ann. § 76-5-101(2).

(15) Montana has established standards for forest practices in "streamside management zones," which are defined to include streams and adjacent areas where management practices that might affect wildlife habitat or water quality, fish, or other aquatic resources need to be modified. A "streamside management zone" is at least 50 feet wide on each side of a stream, measured from the ordinary high-water mark, and extends beyond to include wetlands and areas that provide additional protection in zones with steep slopes or erosive soils. Mont Code Ann. §§ 77-5-302(8)&(303).

(16) The purposes of the Montana statutory provisions pertaining to metal mine reclamation are to provide:

(a) that the usefulness, productivity, and scenic values of all lands and surface waters involved in mining and mining exploration within the boundaries and lawful jurisdiction of the state will receive the greatest reasonable degree of protection and reclamation to beneficial use. . . .

(b) for the recognition of the recreational and aesthetic values of land as a benefit to the state of Montana; and

(c) priorities and values to the aesthetics of our landscape, waters and ground-cover. Mont. Code Ann. § 32-4-302(1).

